

## Section 9-2: Multiply Monomials

**By the end of this lesson, you should be able to answer:**

- How do you use the rules for exponents to multiply monomials?

**Where you might see this in the real world:**

- Manufacturing, sports, photography, modeling

In Section 9-1, we looked at adding and subtracting polynomials. In order to add and subtract polynomials, we needed to combine like terms. If the terms were unlike, then we could not add or subtract them. This does not apply when we are multiplying, though. Today we start out by looking at multiplying monomials.

**Example 1: Simplify**

a.  $-2y(x)$

b.  $3xy^2(-4x^3y)$

c.  $7x(7x)$

When we multiplied the monomials in Example 1, we multiplied the numbers first, then the  $x$ 's, then the  $y$ 's. We will always start by doing the number first, since coefficients are to be in front of the variables. From there, we deal with the variables in alphabetical order, using our rules of multiplying with exponents as we go.

**Example 2:** Fuzzy Jeff bought  $4xy^2$  shares of stock from Shecky-Co. If each share paid  $8y^3$  dollars in dividends, how much money did Jeff make from his stock purchase?

Example 2 gives an example as to how this could apply to the real world. Sometimes stock brokers will offer incentives based on your buying and selling habits that could include some unknowns as listed above.

**Homework:**

*"Fools rush in where fools have been before." – Unknown*